



1237683 - R8 SDMS

**ESAT Region 8 Chain of Custody Form
U.S. Environmental Protection Agency
Region 8 Superfund Program**

Site Name: Rico- Argentine- Soil Sediment - Nov 2010 TDF: DG - 220

Site Manager: Steve Way Work Order: C101105

Relinquished By:

Print Name Scout Deumia Date 12/8/10 Signature RDW

Received By:

Print Name Don Gossard Date 12/8/10 Signature Don Gossard

Relinquished By:

Print Name Date Signature

Received By:

Print Name Steven Way Date 12/8/10 Signature Arky

Relinquished By:

Print Name Date Signature

Received By:

Print Name Roddy Vargas Date 5/18/12 Signature Roddy Vargas



TechLaw, Inc.
Environmental Services Assistance Team
16194 W. 45th Drive, Golden, CO 80403
(303) 312-7720

Task Order: 32 - Analytical and Data Validation Support
DCN#: EP8 - 5 - 5601
Contract: EP-W-06-33
TDF#: D220
Line Item: All
TDF Status: Complete
Date: 12/2/2010
To: Don Goodrich, USEPA, Region 8 ESAT Task Order Project Officer
From: Scout DellaMia, ESAT Environmental Scientist
Through: John Calanni, Region 8 ESAT Team Manager
Subject: Rico-Argentine - Soil Sediment - Nov 2010 (C101105)

Comments:

11/18/2010 Received 11 Soil and Sediment Samples for the following analyses:

Total Recoverable Metals by ICP-OE
Total Recoverable Metals by ICP-MS

Thank You

A handwritten signature in blue ink, appearing to begin with the letter 'h'.

Deliverable Submission and Evaluation Form

EPA Region 8 ESAT

Contractor: TechLaw

Updated: 04/06/2009

Contract No: EP-W-06-33

Submission Information (to be completed by ESAT):

Task Order: 32 - Analytical and Data Validation Support			
DCN: EP8 - 5 - 5601			
TDF:	D220	Line Item:	All
TDF Status: Complete			
Submission Date: 12/2/2010			
Submitted By: Scout DellaMia, ESAT Environmental Scientist			
Deliverable Description:			
Rico-Argentine - Soil Sediment - Nov 2010 (C101105)			
Submitter Comments:			
Hardcopy Data Report and Hardcopy Raw Data + CD-ROM with Data Report .pdf, Scribe EXCEL EDD, and Raw Data .pdf			

Evaluation Information (to be completed by EPA):

Review Date:	12-9-2010		
Reviewed by:	Thomas Mac Donald		
Evaluation:	<input checked="" type="checkbox"/> This deliverable is considered acceptable. <input type="checkbox"/> This deliverable requires revisions as noted below or per attached.		
Evaluation Comments:			
Completeness check 12-9-2010			



U.S. Environmental Protection Agency
Region 8
Technical and Management Services

Laboratory Services Program

Certificate of Analysis

Ref: 8TMS-L

MEMORANDUM

Date: 12/02/10

Subject: Analytical Results--- Rico-Argentine - Soil Sediment - Nov 2010 / DG-220

From: Don Goodrich; EPA Region 8 Analytical Chemistry WAM

To: Steve Way
Superfund
1595 Wynkoop Street

Received Sample Set(s), [Work Order : Date Received]:

[C101105 : 11/18/2010]

Attached are the analytical results for the samples received from the Rico-Argentine - Soil Sediment - Nov 2010 sampling event, according to TDF DG-220. All analyses were performed within their method specified holding times unless otherwise noted in the following narrative.

These samples were prepared, analyzed, and verified by the Environmental Services Assistance Team Laboratory (ESAT) according to the requirements of the Technical Direction Form (TDF).

Note: The laboratory herewith transmits this deliverable to the program/project partner for determination of "final data usability" which may include data validation and data quality assessment per and in accordance with *EPA QA/G-8, Guidance on Environmental Data Verification and Data Validation*, November 2002, EPA/240/R-02/004. Laboratory data qualifiers are applied based on the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, October 2004, referred to as "NFGI".

Case Narrative**C101105**

Quality Assessment: Unless indicated by exception, the QA/QC associated with this sample set produced data within the TDF-specified criteria.

Holding Times: All samples were analyzed within their method-specified technical holding time(s).

1. Initial and Continuing calibration blanks (ICBs and CCBs).
Exceptions: None.
2. Preparation (PB) / Method blanks (MB)
Exceptions: None.
3. Interference Checks (ICSA / ICSAB) for ICP-MS and ICP-OE analyses only.
Exceptions: None.
4. Initial and Continuing calibration verification analyses (ICVs and CCVs).
Exceptions: None.
5. Laboratory Control Sample (LCS) or second source analysis or SRM.
Exceptions: None.
6. Laboratory Fortified blank (LFB) / Blank spike (BS), same source as used for the matrix spikes.
PBS performed with analyses/methods requiring preparation or digestion prior to analysis.
Exceptions: None.
7. Contract Reporting Detection Limit Standard, labeled as CRA, CRDL or CRL.
Exceptions: None.
8. Laboratory Duplicate (DUP). "Source" identifies field sample duplicated in the laboratory. If either the "source" or the duplicate result is <5X the reporting limit, the %D limit of 20% does not apply.
Exceptions: None.
9. Laboratory Matrix Spike (MS) and spike duplicate (MSD). "Source" defines original field sample fortified prior to analysis. Percent recovery (%R) limits do not apply when sample concentration(s) exceed the corresponding analyte spike level by a factor of 4 or greater.
Exceptions: None.
10. Serial Dilution sample analysis (SRD). "Source" is parent field sample diluted 1:5 in the laboratory. Performed for ICP-OE and ICP-MS metals analyses. Percent difference (%D) limits do not apply when analyte concentration(s) are below 50x the source sample's MDL (or 10x its PQL).
Exceptions: None.
11. Internal standards, criteria specified for ICP-MS analyses only, monitored at the instrument.
Exceptions: None.
12. Any calibration using more than two-points produced a correlation coefficient equal to or greater than 0.995.
Exceptions: None.

Acronyms and Definitions:

ESAT	Environmental Services Assistance Team
J	Data Estimated qualifier (also applied to all data less than PQL, greater than or equal to MDL)
MDL	Method Detection Limit
PQL	Practical Quantitation Limit, also known as reporting limit.
RPD	Relative Percent Difference (difference divided by the mean)
%D	Percent difference, serial dilution criteria unit, difference divided by the original result.
%R	Percent recovery, analyzed (less sample contribution) divided by true value
<	Analyte NOT DETECTED at or above the Method Detection Limit (MDL)
mg/L	Parts per million (milligrams per liter). Solids equivalent = mg/Kg.
ug/L	Parts per billion (micrograms per liter). Solids equivalent = ug/Kg.
NR	No Recovery (matrix spike) - Often seen for calcium/magnesium when their concentration exceeds the spike level by > 4x.
NFGI	USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004
RE	Sample Re-analysis. Usually seen on raw data and sequences for required sample dilutions due to over-range analytes.

Method(s) Summary:

As defined in the Technical Direction Form (TDF), some or all of the methods listed below were used for the determination of the reported target analytes.

From EPA's *Methods for the Determination of Metals in Environmental Samples*, Supplement I, May 1994, dissolved, total, and/or total recoverable metals were determined by:

- Method 200.7 / 6010B using a PE Optima ICP-OE (ICP).
- Method 200.8 / 6020 using a Perkin-Elmer Elan 6000 ICP-MS.
- Method 200.2 for total recoverable metals (only) digestion.
- Method 245.1 using a Perkin-Elmer FIMS CVAA (aqueous mercury only).

From *Standard Methods for the Examination of Water and Wastewater*, 18th Edition, 1992, Method 2340B was used for the calculated hardness determination. Hardness is reported as mg(milligram) equivalent CaCO₃ per liter (L) determined as follows:

$$\text{Calculated hardness} = 2.497 * (\text{Calcium, mg/L}) + 4.118 * (\text{Magnesium, mg/L}).$$

From EPA's *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846,

- Method 3015A was used for microwave assisted total metals digestion.
- Method 7473 was used for mercury in solids.

From EPA's *Determination of Inorganic Anions by Ion Chromatography*, Revision 2.1, 1993, Method 300.0 was used to determine the anions.

From EPA's *Methods for Chemical Analysis of Water and Wastes*, March 1983:

- Method 310.1 was followed for the alkalinity determination.
- Method 160.1 was followed for gravimetric total dissolved solids (TDS) determination.
- Method 160.2 was used for gravimetric total suspended solids (TSS) determination.
- Method 415.3 was used for total organic carbon (TOC) determination using either an Apollo 9000 or Phoenix 8000 Non-Dispersive IR (NDIR) system. Also known as dissolved organic carbon (DOC) when performed on the dissolved sample fraction.

The quality control procedures listed in the TDF request were utilized by ESAT to verify accuracy of the results and to evaluate any matrix interferences.

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID:	SLSE02	Date / Time Sampled:	11/17/10 09:35	Workorder:	C101105
EPA Tag No.:	No Tag Prefix-A	Matrix:	Sediment	Lab Number:	C101105-01 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 200.2 / 200.8	Arsenic	37300		ug/kg dry wt	2550	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cadmium	33500		ug/kg dry wt	509	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Chromium	< 5090	U	ug/kg dry wt	2550	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cobalt	< 1020	U	ug/kg dry wt	509	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Lead	23200		ug/kg dry wt	509	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Nickel	< 5090	U	ug/kg dry wt	2550	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Selenium	2820	J	ug/kg dry wt	2550	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Silver	< 2550	U	ug/kg dry wt	509	50	12/02/2010	SV	1011118
EPA 200.2 / 200.7	Aluminum	238		mg/kg dry wt	10.2	5	12/02/2010	SW	1011118
EPA 200.2 / 200.7	Barium	30.2		mg/kg dry wt	1.02	5	12/02/2010	SW	1011118
EPA 200.2 / 200.7	Calcium	298000		mg/kg dry wt	50.9	5	12/02/2010	SW	1011118
EPA 200.2 / 200.7	Copper	42.7		mg/kg dry wt	1.02	5	12/02/2010	SW	1011118
EPA 200.2 / 200.7	Iron	2210		mg/kg dry wt	50.9	5	12/02/2010	SW	1011118
EPA 200.2 / 200.7	Magnesium	2360		mg/kg dry wt	50.9	5	12/02/2010	SW	1011118
EPA 200.2 / 200.7	Manganese	1350		mg/kg dry wt	1.02	5	12/02/2010	SW	1011118
EPA 200.2 / 200.7	Potassium	327	J	mg/kg dry wt	127	5	12/02/2010	SW	1011118
EPA 200.2 / 200.7	Sodium	493		mg/kg dry wt	127	5	12/02/2010	SW	1011118
EPA 200.2 / 200.7	Zinc	7090		mg/kg dry wt	5.09	5	12/02/2010	SW	1011118

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: SLSE04	Date / Time Sampled: 11/17/10 09:41	Workorder: C101105
EPA Tag No.: No Tag Prefix-A	Matrix: Sediment	Lab Number: C101105-02 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 200.2 / 200.8	Arsenic	156000		ug/kg dry wt	2500	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cadmium	16400		ug/kg dry wt	499	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Chromium	7790		ug/kg dry wt	2500	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cobalt	9110		ug/kg dry wt	499	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Lead	335000		ug/kg dry wt	499	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Nickel	9340		ug/kg dry wt	2500	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Selenium	< 4990	U	ug/kg dry wt	2500	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Silver	6260		ug/kg dry wt	499	50	12/02/2010	SV	1011118
EPA 200.2/200.7	Aluminum	7590		mg/kg dry wt	9.98	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Barium	107		mg/kg dry wt	0.998	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Calcium	120000		mg/kg dry wt	49.9	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Copper	92.9		mg/kg dry wt	0.998	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Iron	45200		mg/kg dry wt	49.9	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Magnesium	6400		mg/kg dry wt	49.9	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Manganese	1940		mg/kg dry wt	0.998	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Potassium	1230		mg/kg dry wt	125	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Sodium	492		mg/kg dry wt	125	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Zinc	1560		mg/kg dry wt	4.99	5	12/02/2010	SW	1011118

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID:	SLSE05	Date / Time Sampled:	11/17/10 09:45	Workorder:	C101105				
EPA Tag No.:	No Tag Prefix-A	Matrix:	Sediment	Lab Number:	C101105-03 A				
Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 200.2 / 200.8	Arsenic	3320		ug/kg dry wt	503	10	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cadmium	3160		ug/kg dry wt	101	10	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Chromium	1280		ug/kg dry wt	503	10	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cobalt	5040		ug/kg dry wt	101	10	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Lead	18500		ug/kg dry wt	101	10	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Nickel	3390		ug/kg dry wt	503	10	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Selenium	< 1010	U	ug/kg dry wt	503	10	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Silver	158	J	ug/kg dry wt	101	10	12/02/2010	SV	1011118
EPA 200.2/200.7	Aluminum	5530		mg/kg dry wt	10.1	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Barium	101		mg/kg dry wt	1.01	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Calcium	5150		mg/kg dry wt	50.3	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Copper	174		mg/kg dry wt	1.01	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Iron	12800		mg/kg dry wt	50.3	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Magnesium	3210		mg/kg dry wt	50.3	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Manganese	433		mg/kg dry wt	1.01	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Potassium	698		mg/kg dry wt	126	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Sodium	< 251	U	mg/kg dry wt	126	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Zinc	1330		mg/kg dry wt	5.03	5	12/02/2010	SW	1011118

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID:	SLSE10	Date / Time Sampled:	11/16/10 15:30	Workorder:	C101105				
EPA Tag No.:	No Tag Prefix-A	Matrix:	Sediment	Lab Number:	C101105-04 A				
Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 200.2 / 200.8	Arsenic	56600		ug/kg dry wt	2500	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cadmium	54700		ug/kg dry wt	500	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Chromium	5220		ug/kg dry wt	2500	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cobalt	17400		ug/kg dry wt	500	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Lead	574000		ug/kg dry wt	500	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Nickel	14400		ug/kg dry wt	2500	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Selenium	40200		ug/kg dry wt	2500	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Silver	4060		ug/kg dry wt	500	50	12/02/2010	SV	1011118
EPA 200.2/200.7	Aluminum	8770		mg/kg dry wt	10.0	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Barium	114		mg/kg dry wt	1.00	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Calcium	83100		mg/kg dry wt	50.0	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Copper	576		mg/kg dry wt	1.00	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Iron	91600		mg/kg dry wt	50.0	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Magnesium	3230		mg/kg dry wt	50.0	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Manganese	21700		mg/kg dry wt	1.00	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Potassium	952		mg/kg dry wt	125	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Sodium	<250	U	mg/kg dry wt	125	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Zinc	6620		mg/kg dry wt	5.00	5	12/02/2010	SW	1011118

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID:	SLSE15	Date / Time Sampled:	11/16/10 15:20	Workorder:	C101105				
EPA Tag No.:	No Tag Prefix-A	Matrix:	Sediment	Lab Number:	C101105-05 A				
<hr/>									
Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 200.2 / 200.8	Arsenic	20100		ug/kg dry wt	2570	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cadmium	471000		ug/kg dry wt	515	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Chromium	5720		ug/kg dry wt	2570	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cobalt	172000		ug/kg dry wt	515	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Lead	314000		ug/kg dry wt	515	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Nickel	129000		ug/kg dry wt	2570	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Selenium	5170		ug/kg dry wt	2570	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Silver	2250	J	ug/kg dry wt	515	50	12/02/2010	SV	1011118
EPA 200.2/200.7	Aluminum	16600		mg/kg dry wt	51.5	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Barium	316		mg/kg dry wt	5.15	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Calcium	15500		mg/kg dry wt	257	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Copper	3310		mg/kg dry wt	5.15	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Iron	184000		mg/kg dry wt	257	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Magnesium	1810		mg/kg dry wt	257	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Manganese	98700		mg/kg dry wt	5.15	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Potassium	< 2570	U	mg/kg dry wt	644	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Sodium	< 1290	U	mg/kg dry wt	644	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Zinc	91700		mg/kg dry wt	25.7	25	12/02/2010	SW	1011118

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID:	SLSE15D	Date / Time Sampled:	11/16/10 15:20	Workorder:	C101105
EPA Tag No.:	No Tag Prefix-A	Matrix:	Sediment	Lab Number:	C101105-06 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 200.2 / 200.8	Arsenic	18600		ug/kg dry wt	2590	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cadmium	489000		ug/kg dry wt	517	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Chromium	4210	J	ug/kg dry wt	2590	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cobalt	205000		ug/kg dry wt	517	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Lead	285000		ug/kg dry wt	517	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Nickel	137000		ug/kg dry wt	2590	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Selenium	6280		ug/kg dry wt	2590	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Silver	1960	J	ug/kg dry wt	517	50	12/02/2010	SV	1011118
EPA 200.2/200.7	Aluminum	12900		mg/kg dry wt	103	50	12/02/2010	SW	1011118
EPA 200.2/200.7	Barium	364		mg/kg dry wt	10.3	50	12/02/2010	SW	1011118
EPA 200.2/200.7	Calcium	15900		mg/kg dry wt	517	50	12/02/2010	SW	1011118
EPA 200.2/200.7	Copper	2640		mg/kg dry wt	10.3	50	12/02/2010	SW	1011118
EPA 200.2/200.7	Iron	144000		mg/kg dry wt	517	50	12/02/2010	SW	1011118
EPA 200.2/200.7	Magnesium	1630		mg/kg dry wt	517	50	12/02/2010	SW	1011118
EPA 200.2/200.7	Manganese	118000		mg/kg dry wt	10.3	50	12/02/2010	SW	1011118
EPA 200.2/200.7	Potassium	< 5170	U	mg/kg dry wt	1290	50	12/02/2010	SW	1011118
EPA 200.2/200.7	Sodium	< 2590	U	mg/kg dry wt	1290	50	12/02/2010	SW	1011118
EPA 200.2/200.7	Zinc	98500		mg/kg dry wt	51.7	50	12/02/2010	SW	1011118

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID:	SLSE18-06	Date / Time Sampled:	11/16/10 15:00	Workorder:	C101105				
EPA Tag No.:	No Tag Prefix-A	Matrix:	Sediment	Lab Number:	C101105-07 A				
Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 200.2 / 200.8	Arsenic	22400		ug/kg dry wt	2460	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cadmium	138000		ug/kg dry wt	492	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Chromium	9480		ug/kg dry wt	2460	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cobalt	15100		ug/kg dry wt	492	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Lead	699000		ug/kg dry wt	492	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Nickel	18600		ug/kg dry wt	2460	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Selenium	3530	J	ug/kg dry wt	2460	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Silver	5080		ug/kg dry wt	492	50	12/02/2010	SV	1011118
EPA 200.2/200.7	Aluminum	18900		mg/kg dry wt	9.84	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Barium	71.2		mg/kg dry wt	0.984	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Calcium	13000		mg/kg dry wt	49.2	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Copper	3400		mg/kg dry wt	0.984	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Iron	197000		mg/kg dry wt	49.2	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Magnesium	2410		mg/kg dry wt	49.2	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Manganese	6390		mg/kg dry wt	0.984	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Potassium	864		mg/kg dry wt	123	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Sodium	<246	U	mg/kg dry wt	123	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Zinc	28000		mg/kg dry wt	4.92	5	12/02/2010	SW	1011118

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID:	SLSEPP-06	Date / Time Sampled:	11/16/10 15:05	Workorder:	C101105				
EPA Tag No.:	No Tag Prefix-A	Matrix:	Sediment	Lab Number:	C101105-08 A				
<hr/>									
Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 200.2 / 200.8	Arsenic	21800		ug/kg dry wt	2540	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cadmium	359000		ug/kg dry wt	508	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Chromium	5850		ug/kg dry wt	2540	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cobalt	153000		ug/kg dry wt	508	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Lead	397000		ug/kg dry wt	508	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Nickel	97300		ug/kg dry wt	2540	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Selenium	5890		ug/kg dry wt	2540	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Silver	4330		ug/kg dry wt	508	50	12/02/2010	SV	1011118
EPA 200.2/200.7	Aluminum	14800		mg/kg dry wt	50.8	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Barium	270		mg/kg dry wt	5.08	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Calcium	13600		mg/kg dry wt	254	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Copper	2990		mg/kg dry wt	5.08	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Iron	152000		mg/kg dry wt	254	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Magnesium	2550		mg/kg dry wt	254	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Manganese	82400		mg/kg dry wt	5.08	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Potassium	< 2540	U	mg/kg dry wt	635	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Sodium	< 1270	U	mg/kg dry wt	635	25	12/02/2010	SW	1011118
EPA 200.2/200.7	Zinc	74700		mg/kg dry wt	25.4	25	12/02/2010	SW	1011118

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: SLSO01-08	Date / Time Sampled: 11/16/10 14:45	Workorder: C101105
EPA Tag No.: No Tag Prefix-A	Matrix: Soil	Lab Number: C101105-09 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 200.2 / 200.8	Arsenic	19300		ug/kg dry wt	2440	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cadmium	5090		ug/kg dry wt	489	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Chromium	3660	J	ug/kg dry wt	2440	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cobalt	8050		ug/kg dry wt	489	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Lead	2210000		ug/kg dry wt	489	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Nickel	11600		ug/kg dry wt	2440	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Selenium	2750	J	ug/kg dry wt	2440	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Silver	15300		ug/kg dry wt	489	50	12/02/2010	SV	1011118
EPA 200.2/200.7	Aluminum	2150		mg/kg dry wt	9.77	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Barium	26.8		mg/kg dry wt	0.977	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Calcium	371		mg/kg dry wt	48.9	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Copper	555		mg/kg dry wt	0.977	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Iron	171000		mg/kg dry wt	48.9	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Magnesium	814		mg/kg dry wt	48.9	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Manganese	259		mg/kg dry wt	0.977	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Potassium	1140		mg/kg dry wt	122	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Sodium	< 244	U	mg/kg dry wt	122	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Zinc	922		mg/kg dry wt	4.89	5	12/02/2010	SW	1011118

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID:	SLSO02-06	Date / Time Sampled:	11/16/10 15:25	Workorder:	C101105
EPA Tag No.:	No Tag Prefix-A	Matrix:	Soil	Lab Number:	C101105-10 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 200.2 / 200.8	Arsenic	11200		ug/kg dry wt	2430	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cadmium	1880		ug/kg dry wt	485	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Chromium	7860		ug/kg dry wt	2430	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cobalt	8670		ug/kg dry wt	485	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Lead	1470000		ug/kg dry wt	485	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Nickel	15200		ug/kg dry wt	2430	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Selenium	< 4850	U	ug/kg dry wt	2430	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Silver	7060		ug/kg dry wt	485	50	12/02/2010	SV	1011118
EPA 200.2/200.7	Aluminum	3750		mg/kg dry wt	9.70	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Barium	20.5		mg/kg dry wt	0.970	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Calcium	2020		mg/kg dry wt	48.5	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Copper	281		mg/kg dry wt	0.970	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Iron	81000		mg/kg dry wt	48.5	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Magnesium	2480		mg/kg dry wt	48.5	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Manganese	537		mg/kg dry wt	0.970	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Potassium	803		mg/kg dry wt	121	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Sodium	< 243	U	mg/kg dry wt	121	5	12/02/2010	SW	1011118
EPA 200.2/200.7	Zinc	355		mg/kg dry wt	4.85	5	12/02/2010	SW	1011118

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID:	SLSO13-06	Date / Time Sampled:	11/16/10 15:10	Workorder:	C101105				
EPA Tag No.:	No Tag Prefix-A	Matrix:	Soil	Lab Number:	C101105-11 A				
<hr/>									
Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 200.2 / 200.8	Arsenic	23700		ug/kg dry wt	2490	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cadmium	28000		ug/kg dry wt	498	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Chromium	15300		ug/kg dry wt	2490	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Cobalt	9380		ug/kg dry wt	498	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Lead	924000		ug/kg dry wt	498	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Nickel	13600		ug/kg dry wt	2490	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Selenium	3350	J	ug/kg dry wt	2490	50	12/02/2010	SV	1011118
EPA 200.2 / 200.8	Silver	2830		ug/kg dry wt	498	50	12/02/2010	SV	1011118
EPA 200.2/200.7	Aluminum	24700		mg/kg dry wt	19.9	10	12/02/2010	SW	1011118
EPA 200.2/200.7	Barium	37.5		mg/kg dry wt	1.99	10	12/02/2010	SW	1011118
EPA 200.2/200.7	Calcium	11300		mg/kg dry wt	99.7	10	12/02/2010	SW	1011118
EPA 200.2/200.7	Copper	2790		mg/kg dry wt	1.99	10	12/02/2010	SW	1011118
EPA 200.2/200.7	Iron	382000		mg/kg dry wt	99.7	10	12/02/2010	SW	1011118
EPA 200.2/200.7	Magnesium	1190		mg/kg dry wt	99.7	10	12/02/2010	SW	1011118
EPA 200.2/200.7	Manganese	3120		mg/kg dry wt	1.99	10	12/02/2010	SW	1011118
EPA 200.2/200.7	Potassium	343	J	mg/kg dry wt	249	10	12/02/2010	SW	1011118
EPA 200.2/200.7	Sodium	< 498	U	mg/kg dry wt	249	10	12/02/2010	SW	1011118
EPA 200.2/200.7	Zinc	8590		mg/kg dry wt	9.97	10	12/02/2010	SW	1011118

"J" Qualifier indicates an estimated value

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #:

DG-220

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
ICPMS-PE DRC-II									
Batch 101118 - 200.2 - TR Metals									
<i>Solid (dry wt basis)</i>									
ICPMS-PE DRC-II									
Method Blank (101118-BLK2)									
Dilution Factor: 5									
Prepared: 11/30/10 Analyzed: 12/02/10									
Chromium	< 250	500	ug/kg dry wt						
Cobalt	< 50.0	100	"						
Nickel	< 250	500	"						
Arsenic	< 250	1000	"						
Selenium	< 250	500	"						
Silver	< 50.0	250	"						
Cadmium	< 50.0	100	"						
Lead	< 50.0	100	"						
Duplicate (101118-DUP2)									
Dilution Factor: 5									
Source: C101105-01									
Prepared: 11/30/10 Analyzed: 12/02/10									
Chromium	< 2520	5030	ug/kg dry wt	< 2520				35	
Cobalt	< 503	1010	"	< 503				35	
Nickel	< 2520	5030	"	< 2520				35	
Arsenic	45260	10100	"	37330		19		35	
Selenium	< 2520	5030	"	2820				35	
Silver	< 503	2520	"	< 503				35	
Cadmium	37010	1010	"	33510		10		35	
Lead	23450	1010	"	23150		1		35	
Matrix Spike (101118-MS2)									
Dilution Factor: 5									
Source: C101105-01									
Prepared: 11/30/10 Analyzed: 12/02/10									
Chromium	36860	4810	ug/kg dry wt	38500	< 2410	96	65-135		
Cobalt	14970	963	"	19300	< 481	78	65-120		
Nickel	38470	4810	"	48100	< 2410	80	65-135		
Arsenic	119100	9630	"	77000	37330	106	65-135		
Selenium	145500	4810	"	193000	2820	74	65-135		
Silver	6440	2410	"	7220	< 481	89	65-135		
Cadmium	51490	963	"	19300	33510	93	65-135		
Lead	109600	963	"	96300	23150	90	65-135		

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1011118 - 200.2 - TR Metals		<i>Solid (dry wt basis)</i>							ICPMS-PE DRC-II
Matrix Spike Dup (1011118-MSD2)		Dilution Factor: 5		Source: C101105-01			Prepared: 11/30/10 Analyzed: 12/02/10		
Chromium	37620	5000	ug/kg dry wt	40000	< 2500	94	65-135	2	35
Cobalt	15940	1000	"	20000	< 500	80	65-120	6	35
Nickel	40690	5000	"	50000	< 2500	81	65-135	6	35
Arsenic	120000	10000	"	80000	37330	103	65-135	0.7	35
Selenium	158000	5000	"	200000	2820	78	65-135	8	35
Silver	6528	2500	"	7500	< 500	87	65-135	1	35
Cadmium	56160	1000	"	20000	33510	113	65-135	9	35
Lead	112300	1000	"	100000	23150	89	65-135	3	35
Post Spike (1011118-PS2)		Dilution Factor: 5		Source: C101105-01			Prepared: 11/30/10 Analyzed: 12/02/10		
Chromium	108.6		ug/L	100	14.9	94	80-120		
Cobalt	68.8		"	100	-21.8	91	80-120		
Nickel	33.6		"	100	-48.1	82	80-120		
Arsenic	471.0		"	100	366.6	104	80-120		
Selenium	540.7		"	500	27.7	103	80-120		
Silver	93.7		"	100	1.5	92	80-120		
Cadmium	432.9		"	100	329.1	104	80-120		
Lead	320.9		"	100	227.4	93	80-120		
Reference (1011118-SRM2)		Dilution Factor: 2		Prepared: 11/30/10 Analyzed: 12/02/10					
Chromium	95440	3890	ug/kg dry wt	96500		99	80-120		
Cobalt	126300	777	"	140000		90	80-120		
Nickel	45560	3890	"	56800		80	76.5-123.4		
Arsenic	803400	7770	"	930000		86	65-134		
Selenium	35010	3890	"	37000		95	48-152		
Silver	16810	1940	"	20900		80	64-136		
Cadmium	42290	777	"	41600		102	77-123		
Lead	210500	777	"	224000		94	75-125		

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #:

DG-220

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1012005 - 1011118		<i>Solid (dry wt basis)</i>							ICPMS-PE DRC-II
Serial Dilution (1012005-SRD1)		Dilution Factor: 2	Source: C101105-01			Prepared: 11/30/10 Analyzed: 12/02/10			
Chromium	< 12700	25500	ug/kg dry wt		< 2,540.00				10
Cobalt	< 12700	25500	"		< 2,540.00				10
Nickel	< 12700	25500	"		< 2,540.00				10
Arsenic	37890	25500	"		37330		1		10
Selenium	< 12700	25500	"		2820				10
Silver	< 12700	25500	"		< 2,540.00				10
Cadmium	32710	25500	"		33510		2		10
Lead	22040	25500	"		23150		5		10

ICPOE - PE Optima

Batch 1011118 - 200.2 - TR Metals		<i>Solid (dry wt basis)</i>			ICPOE - PE Optima				
Method Blank (1011118-BLK1)		Dilution Factor: 1				Prepared: 11/30/10 Analyzed: 12/02/10			
Aluminum	< 2.00	5.00	mg/kg dry wt						
Barium	< 0.200	0.500	"						
Calcium	< 10.0	25.0	"						
Copper	< 0.200	1.00	"						
Iron	< 10.0	25.0	"						
Potassium	< 25.0	100	"						
Magnesium	< 10.0	25.0	"						
Manganese	< 0.200	0.500	"						
Sodium	< 25.0	50.0	"						
Zinc	< 1.00	2.00	"						

Duplicate (1011118-DUPI)		Dilution Factor: 5	Source: C101105-01			Prepared: 11/30/10 Analyzed: 12/02/10			
Aluminum	248.06	25.2	mg/kg dry wt			237.61		4	35
Barium	32.592	2.52	"			30.186		8	35
Calcium	330900	126	"			297590		11	35
Copper	44.500	5.03	"			42.685		4	35
Iron	2341.1	126	"			2208.6		6	35
Potassium	325.81	503	"			327.24		0.4	35
Magnesium	2543.6	126	"			2363.4		7	35
Manganese	1507.0	2.52	"			1348.8		11	35
Sodium	530.12	252	"			492.94		7	35
Zinc	7857.6	10.1	"			7085.1		10	35

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #:

DG-220

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1011118 - 200.2 - TR Metals		<i>Solid (dry wt basis)</i>							ICPOE - PE Optima
Matrix Spike (1011118-MS1)		Dilution Factor: 5	Source: C101105-01			Prepared: 11/30/10 Analyzed: 12/02/10			
Aluminum	438.45	24.1	mg/kg dry wt	193	237.61	104	65-135		
Barium	51.356	2.41	"	19.3	30.186	110	65-135		
Calcium	315500	120	"	96.3	297590	NR	65-135		
Copper	71.953	4.81	"	28.9	42.685	101	65-135		
Iron	2917.0	120	"	289	2208.6	245	65-135		
Potassium	1324.8	481	"	963	327.24	104	65-135		
Magnesium	2699.6	120	"	193	2363.4	175	65-135		
Manganese	1501.4	2.41	"	19.3	1348.8	793	65-135		
Sodium	836.48	241	"	289	492.94	119	65-135		
Zinc	7710.9	9.63	"	19.3	7085.1	NR	65-135		
Matrix Spike Dup (1011118-MSD1)		Dilution Factor: 5	Source: C101105-01			Prepared: 11/30/10 Analyzed: 12/02/10			
Aluminum	451.68	25.0	mg/kg dry wt	200	237.61	107	65-135	3	35
Barium	51.218	2.50	"	20.0	30.186	105	65-135	0.3	35
Calcium	327960	125	"	100	297590	NR	65-135	4	35
Copper	78.578	5.00	"	30.0	42.685	120	65-135	9	35
Iron	2628.1	125	"	300	2208.6	140	65-135	10	35
Potassium	1348.6	500	"	1000	327.24	102	65-135	2	35
Magnesium	2707.6	125	"	200	2363.4	172	65-135	0.3	35
Manganese	1420.6	2.50	"	20.0	1348.8	359	65-135	6	35
Sodium	840.97	250	"	300	492.94	116	65-135	0.5	35
Zinc	8157.2	10.0	"	20.0	7085.1	NR	65-135	6	35
Post Spike (1011118-PS1)		Dilution Factor: 5	Source: C101105-01			Prepared: 11/30/10 Analyzed: 12/02/10			
Aluminum	13157		ug/L	10100	2333.8	107	80-120		
Barium	390.21		"	100	296.49	94	80-120		
Calcium	2879700		"	10100	2923000	NR	80-120		
Copper	519.81		"	100	419.25	101	80-120		
Iron	31156		"	10100	21693	94	80-120		
Potassium	14027		"	10100	3214.2	107	80-120		
Magnesium	33293		"	10100	23213	100	80-120		
Manganese	13058		"	100	13248	NR	80-120		
Sodium	15830		"	10100	4841.6	109	80-120		
Zinc	68946		"	100	69590	NR	80-120		

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1011118 - 200.2 - TR Metals		<i>Solid (dry wt basis)</i>							ICPOE - PE Optima
Reference (1011118-SRM1)		Dilution Factor: 5							Prepared: 11/30/10 Analyzed: 12/02/10
Aluminum	288.84	48.6	mg/kg dry wt	309	93	63-137			
Barium	2.6913	4.86	"	5.30	51	48-152			
Calcium	169200	243	"	184000	92	78-122			
Copper	6206.4	9.71	"	6680	93	80-120			
Iron	17682	243	"	21000	84	80-120			
Potassium	< 243	971	"	102		0-370			
Magnesium	101780	243	"	113000	90	80-120			
Manganese	197.10	4.86	"	201	98	80-120			
Sodium	< 243	486	"	92.8		0-299			
Zinc	158.29	19.4	"	175	90	73-127			
Batch 1012004 - 1011118		<i>Solid (dry wt basis)</i>							ICPOE - PE Optima
Serial Dilution (1012004-SRD1)		Dilution Factor: 2							Prepared: 11/30/10 Analyzed: 12/02/10
Aluminum	< 509	1270	mg/kg dry wt	237.61					10
Barium	< 50.9	127	"	30.186					10
Calcium	297500	6360	"	297590		0.03			10
Copper	< 50.9	50.9	"	42.685					10
Iron	< 2550	6360	"	2208.6					10
Potassium	< 6360	25500	"	327.24					10
Magnesium	< 2550	6360	"	2363.4					10
Manganese	1386.4	127	"	1348.8		3			10
Sodium	< 6360	12700	"	492.94					10
Zinc	7614.3	509	"	7085.1		7			10

NOTE: %R = % Recovery, %R limits do not apply when sample levels exceed 4x the spike level.
 RPD = Relative Percent Difference, %D = % Difference, DL = Detection Limit for QC sample

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

TechLaw Inc., ESAT Region 8**INORGANIC ANALYSES DATA SHEET****Initial and Continuing Calibration Blanks**

Analytical Method:	<u>EPA 200.2/200.7</u>	Analysis Name:	<u>ICPOE Tot. Rec Metals-2010</u>
Instrument:	<u>ICPOE - PE Optima</u>	Work Order: Nu	<u>C101105</u>
Analytical Sequence:	<u>1012004 Total Recoverable</u>	Concentration Units:	<u>mg/kg dry wt</u>

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL	
		1	2	3	4	1011118-BLK1	NA		
Aluminum	2.49	3.22	7.42	6.80	5.48	1011118-BLK1	NA	5.00	
		5	6	7	8				
Barium	-0.03	1	2	3	4	1011118-BLK1	NA	0.50	
		-0.10	0.00	-0.05	0.04				
		5	6	7	8	0.00	NA		
Calcium	-1.12	1	2	3	4	1011118-BLK1	NA	25.00	
		-1.62	3.62	1.47	1.71				
		5	6	7	8	4.76	NA		
Copper	0.09	1	2	3	4	1011118-BLK1	NA	1.00	
		0.21	0.63	0.91	0.92				
		5	6	7	8	0.45	NA		
Iron	0.21	1	2	3	4	1011118-BLK1	NA	25.00	
		29.26	22.91	52.15	46.50				
		5	6	7	8	20.26	NA		
Potassium	-17.46	1	2	3	4	1011118-BLK1	NA	100.00	
		-1.99	15.23	22.38	30.28				
		5	6	7	8	3.03	NA		
Magnesium	0.18	1	2	3	4	1011118-BLK1	NA	25.00	
		1.18	1.91	2.13	1.54				
		5	6	7	8	0.62	NA		
Manganese	0.12	1	2	3	4	1011118-BLK1	NA	0.50	
		0.01	0.10	0.19	0.30				
		5	6	7	8	0.87	NA		

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

TechLaw Inc., ESAT Region 8

INORGANIC ANALYSES DATA SHEET

Initial and Continuing Calibration Blanks

Analytical Method: EPA 200.2/200.7

Analysis Name: ICPOE Tot. Rec Metals-2010

Instrument: ICPOE - PE Optima

Work Order: Nu C101105

Analytical Sequence: 1012004 **Total Recoverable**

Concentration Units: mg/kg dry wt

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL	
		1	2	3	4	1011118-BLK1	NA		
Sodium	-8.14	1	2	3	4	1011118-BLK1	NA	50.00	
		-7.00	-0.95	-4.92	-1.84	2.26	NA		
		5	6	7	8				
Zinc	1.05	1	2	3	4	1011118-BLK1	NA	2.00	
		0.85	1.95	8.57	7.22	2.31	NA		
		5	6	7	8				

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #:

DG-220

TechLaw Inc., ESAT Region 8

INORGANIC ANALYSES DATA SHEET**Initial and Continuing Calibration Blanks**

Analytical Method: EPA 200.2 / 200.8 Analysis Name: ICP-MS Tot. Rec. Metals-2010
 Instrument: ICPMS-PE DRC-II Work Order: Nu C101105
 Analytical Sequence: 1012005 Total Recoverable Concentration Units: ug/kg dry wt

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)	PQL
		1	2	3	4		
Chromium	-0.17	1	2	3	4	NA	1011118-BLK2
		-0.14	-0.16	-0.12		NA	
		5	6	7	8	-0.04	
Cobalt	0.01	1	2	3	4	NA	1011118-BLK2
		0.01	0.01	0.01		NA	
		5	6	7	8	0.00	
Nickel	0.01	1	2	3	4	NA	1011118-BLK2
		0.00	0.01	0.02		NA	
		5	6	7	8	-0.03	
Arsenic	0.07	1	2	3	4	NA	1011118-BLK2
		0.01	-0.04	0.01		NA	
		5	6	7	8	-0.19	
Selenium	0.22	1	2	3	4	NA	1011118-BLK2
		0.02	-0.06	0.06		NA	
		5	6	7	8	-0.10	
Silver	0.12	1	2	3	4	NA	1011118-BLK2
		0.13	0.10	0.09		NA	
		5	6	7	8	0.07	
Cadmium	0.03	1	2	3	4	NA	1011118-BLK2
		0.00	0.02	-0.02		NA	
		5	6	7	8	0.06	
Lead	0.03	1	2	3	4	NA	1011118-BLK2
		0.01	0.02	0.03		NA	
		5	6	7	8	0.01	

TechLaw, Inc. - ESAT Region 8**Initial and Continuing Calibration Verification Results**

ICPOE - PE Optima

Method: EPA 200.2/200.7

Analysis Name: ICPOE Tot. Rec Metals-2010

Sequence: 1012004

Work Order: C101105

Units: mg/kg dry wt

Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Aluminum	1000	1008	100.8	1			2			3		
				12500	12550	100.4	12500	12500	100.0	12500	12570	100.6
				4			5			6		
				12500	12600	100.8						
				7			8			9		
				1			2			3		
				12500	12550	100.4	12500	12500	100.0	12500	12570	100.6
				4			5			6		
Barium	1000	1013	101.3	1			2			3		
				500	518.1	103.6	500	502.7	100.5	500	499.5	99.9
				4			5			6		
				500	495.8	99.2						
				7			8			9		
				1			2			3		
				500	518.1	103.6	500	502.7	100.5	500	499.5	99.9
				4			5			6		
Calcium	1000	934.2	93.4	1			2			3		
				12500	12520	100.2	12500	12510	100.1	12500	12470	99.8
				4			5			6		
				12500	12480	99.8						
				7			8			9		
				1			2			3		
				12500	12520	100.2	12500	12510	100.1	12500	12470	99.8
				4			5			6		
				12500	12480	99.8						
				7			8			9		

TechLaw, Inc. - ESAT Region 8												
			Initial and Continuing Calibration Verification Results									
ICPOE - PE Optima			Method: EPA 200.2/200.7			Analysis Name: ICPOE Tot. Rec Metals-2010						
Sequence: 1012004			Work Order: C101105			Units: mg/kg dry wt						
Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Copper	1000	994.8	99.5	1			2			3		
				1000	1048	104.8	1000	1012	101.2	1000	1013	101.3
				4			5			6		
				1000	1011	101.1						
				7			8			9		
				1			2			3		
				1000	1048	104.8	1000	1012	101.2	1000	1013	101.3
				4			5			6		
Iron	1000	947.4	94.7	1000	12670	101.4	12500	12650	101.2	12500	12610	100.9
				4			5			6		
				12500	12690	101.5						
				7			8			9		
				1			2			3		
				12500	12670	101.4	12500	12650	101.2	12500	12610	100.9
				4			5			6		
				12500	12690	101.5						
Magnesium	1000	997.8	99.8	7			8			9		
				1			2			3		
				12500	12620	101.0	12500	12560	100.5	12500	12600	100.8
				4			5			6		
				12500	12630	101.0						
				7			8			9		
				1			2			3		
	1000	997.8	99.8	12500	12620	101.0	12500	12560	100.5	12500	12600	100.8
				4			5			6		
				12500	12630	101.0						
				7			8			9		

TechLaw, Inc. - ESAT Region 8

Initial and Continuing Calibration Verification Results

ICPOE - PE Optima

Method: EPA 200.2/200.7

Analysis Name: ICPOE Tot. Rec Metals-2010

Sequence: 1012004

Work Order: C101105

Units: mg/kg dry wt

Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Manganese	1000	1025	102.5	1			2			3		
				1000	1052	105.2	1000	1018	101.8	1000	1013	101.3
				4			5			6		
				1000	1011	101.1						
				7			8			9		
				1			2			3		
				1000	1052	105.2	1000	1018	101.8	1000	1013	101.3
				4			5			6		
Potassium	5000	4815	96.3	1			2			3		
				25000	24870	99.5	25000	24940	99.8	25000	25170	100.7
				4			5			6		
				25000	25130	100.5						
				7			8			9		
				1			2			3		
				25000	24870	99.5	25000	24940	99.8	25000	25170	100.7
				4			5			6		
Sodium	5000	4815	96.3	25000	25130	100.5						
				7			8			9		
				1			2			3		
				12500	12490	99.9	12500	12490	99.9	12500	12630	101.0
				4			5			6		
				12500	12610	100.9						
				7			8			9		
	1000	953.2	95.3	1			2			3		
				12500	12490	99.9	12500	12490	99.9	12500	12630	101.0
				4			5			6		
				12500	12610	100.9						
				7			8			9		

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

TechLaw, Inc. - ESAT Region 8

Initial and Continuing Calibration Verification Results

ICPOE - PE Optima

Method: EPA 200.2/200.7

Analysis Name: ICPOE Tot. Rec Metals-2010

Sequence: 1012004

Work Order: C101105

Units: mg/kg dry wt

Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Zinc	1000	998.0	99.8	1			2			3		
				2500	2583	103.3	2500	2534	101.4	2500	2520	100.8
				4			5			6		
				2500	2515	100.6						
				7			8			9		
				1			2			3		
				2500	2583	103.3	2500	2534	101.4	2500	2520	100.8
				4			5			6		
				2500	2515	100.6						
				7			8			9		

Metals - ICV & CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria - ICV = 90 - 110%R, CCV = 80 - 120%R.

TechLaw, Inc. - ESAT Region 8

Initial and Continuing Calibration Verification Results

ICPMS-PE DRC-II

Method: EPA 200.2 / 200.8

Analysis Name: ICP-MS Tot. Rec. Metals-2010

Sequence: 1012005

Work Order: C101105

Units: ug/kg dry wt

Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Arsenic	50.0	50.5	101.0	1			2			3		
				50.0	49.0	98.0	50.0	49.1	98.2	50.0	52.2	104.4
				4			5			6		
				7			8			9		
				1			2			3		
				50.0	50.1	100.2	50.0	50.2	100.4	50.0	50.4	100.8
				4			5			6		
				7			8			9		
				1			2			3		
Cadmium	50.0	47.6	95.2	50.0	45.4	90.8	50.0	47.7	95.4	50.0	48.9	97.8
				4			5			6		
				7			8			9		
				1			2			3		
				50.0	48.5	97.0	50.0	47.3	94.6	50.0	50.6	101.2
				4			5			6		
				7			8			9		
				1			2			3		
				50.0	51.0	102.0	50.0	47.2	94.4	50.0	49.5	99.0
Lead	50.0	47.0	94.0	4			5			6		
				7			8			9		
				1			2			3		
				50.0	48.7	97.4	50.0	48.8	97.6	50.0	51.6	103.2
				4			5			6		
				7			8			9		
				1			2			3		

TechLaw, Inc. - ESAT Region 8

Initial and Continuing Calibration Verification Results

ICPMS-PE DRC-II

Method: EPA 200.2 / 200.8

Analysis Name: ICP-MS Tot. Rec. Metals-2010

Sequence: 1012005

Work Order: C101105

Units: ug/kg dry wt

Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Selenium	250	243.3	97.3	1			2			3		
				50.0	48.0	96.0	50.0	49.6	99.2	50.0	50.6	101.2
				4			5			6		
				7			8			9		
Silver	50.0	49.0	98.0	1			2			3		
				50.0	50.4	100.8	50.0	50.6	101.2	50.0	50.9	101.8
				4			5			6		
				7			8			9		

Metals - ICV & CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria - ICV = 90 - 110%R, CCV = 80 - 120%R.

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

TechLaw, Inc. - ESAT Region 8
ICP Interference Check Sample
ICPMS-PE DRC-II

<u>Analyte</u>	<u>Check Sample</u>	<u>Result*</u>	<u>Units</u>	<u>True</u>	<u>%R</u>	<u>POL</u>
Sequence: 1012005	Analysis: ICP-MS Tot. Rec. Metals-2010					
Arsenic	IFA1	0.0	ug/L			2.0
	IFB1	19.3	ug/L	20	96	2.0
Cadmium	IFA1	0.1	ug/L			0.2
	IFB1	19.6	ug/L	20	98	0.2
Chromium	IFA1	-0.1	ug/L			1.0
	IFB1	18.9	ug/L	20	94	1.0
Cobalt	IFA1	0.0	ug/L			0.2
	IFB1	19.1	ug/L	20	96	0.2
Lead	IFA1	0.1	ug/L			0.2
	IFB1	0.0	ug/L			0.2
Nickel	IFA1	-0.3	ug/L			1.0
	IFB1	20.2	ug/L	20	101	1.0
Selenium	IFA1	0.1	ug/L			1.0
	IFB1	0.0	ug/L			1.0
Silver	IFA1	0.0	ug/L			0.5
	IFB1	19.4	ug/L	20	97	0.5

*Criteria = 80-120%R of True Value or +/- PQL

See raw data for complete analyte list and results.

TechLaw, Inc. - ESAT Region 8

ICP Interference Check Sample

ICPOE - PE Optima

<u>Analyte</u>	<u>Check Sample</u>	<u>Result*</u>	<u>Units</u>	<u>True</u>	<u>%R</u>	<u>PQL</u>
Sequence: 1012004	Analysis: ICPOE Tot. Rec Metals-2010					
Aluminum	IFAI	62,835.9	ug/L	60,000	105	50.0
	IFB1	63,100.3	ug/L	60,000	105	50.0
Barium	IFAI	-3.5	ug/L			5.00
	IFB1	291.7	ug/L	300	97	5.00
Calcium	IFAI	298,737.9	ug/L	300,000	100	250
	IFB1	298,703.8	ug/L	300,000	100	250
Copper	IFAI	0.4	ug/L			2.00
	IFB1	310.5	ug/L	300	103	2.00
Iron	IFAI	242,263.1	ug/L	250,000	97	250
	IFB1	241,676.3	ug/L	250,000	97	250
Magnesium	IFAI	147,087.7	ug/L	150,000	98	250
	IFB1	147,882.6	ug/L	150,000	99	250
Manganese	IFAI	1.4	ug/L			5.00
	IFB1	197.3	ug/L	200	99	5.00
Potassium	IFAI	-106.0	ug/L			1000
	IFB1	20,622.0	ug/L	20,000	103	1000
Sodium	IFAI	52,331.1	ug/L	50,000	105	500
	IFB1	52,325.4	ug/L	50,000	105	500
Zinc.	IFAI	3.3	ug/L			20.0
	IFB1	275.8	ug/L	300	92	20.0

*Criteria = 80-120%R of True Value or +/- PQL

See raw data for complete analyte list and results.

TechLaw, Inc. - ESAT Region 8
Detection Limit (PQL) Standard
ICPMS-PE DRC-II

Metals (Total Recov) by EPA 200/7000 Series Methods

Sequence: 1012005

<u>Analyte</u>	<u>True</u>	<u>Found</u>	<u>%R</u>	<u>Units</u>
Arsenic	2.00	1.9	93	ug/L
Cadmium	0.200	0.2	98	ug/L
Chromium	1.00	0.8	77	ug/L
Cobalt	0.200	0.2	92	ug/L
Lead	0.200	0.2	83	ug/L
Nickel	1.00	0.9	92	ug/L
Selenium	1.00	0.9	93	ug/L
Silver	0.500	0.5	100	ug/L

Recovery Control Limits: 70-130% except Pb, Tl, Sb, & Hg at 50-150%. No limits for Al, Ca, Fe, K, Mg & Na.

TechLaw, Inc. - ESAT Region 8
Detection Limit (PQL) Standard
ICPOE - PE Optima

Metals (Total Recov) by EPA 200/7000 Series Methods

Sequence: 1012004

<u>Analyte</u>	<u>True</u>	<u>Found</u>	<u>%R</u>	<u>Units</u>
Aluminum	100	106.8	107	ug/L
	100	106.8	107	
Barium	10.0	10.10	101	ug/L
	10.0	10.10	101	
Calcium	250	246.9	99	ug/L
	250	246.9	99	
Copper	10.0	9.722	97	ug/L
	10.0	9.722	97	
Iron	100	96.00	96	ug/L
	100	96.00	96	
Magnesium	1000	1029	103	ug/L
	1000	1029	103	

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

**TechLaw, Inc. - ESAT Region 8
Detection Limit (PQL) Standard
ICPOE - PE Optima**

Metals (Total Recov) by EPA 200/7000 Series Methods

Sequence: 1012004

<u>Analyte</u>	<u>True</u>	<u>Found</u>	<u>%R</u>	<u>Units</u>
Manganese	10.0	10.22	102	ug/L
	10.0	10.22	102	
Potassium	1000	1021	102	ug/L
	1000	1021	102	
Sodium	1000	1036	104	ug/L
	1000	1036	104	
Zinc	50.0	51.05	102	ug/L
	50.0	51.05	102	

Recovery Control Limits: 70-130% except Pb, Tl, Sb, & Hg at 50-150%. No limits for Al, Ca, Fe, K, Mg & Na.

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #:

DG-220

TechLaw Inc., ESAT Region 8

INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.7

Total Recoverable

Sequence ID#: 1012004

Instrument ID #: ICPOE - PE Optima

Solid (dry wt basis)

LSR #: DG-220

Analysis ID	Sample Name	Analysis Date	Analysis Time
1012004-ICV1	Initial Cal Check	12/02/10	09:05
1012004-ICV1	Initial Cal Check	12/02/10	09:05
1012004-ICB1	Initial Cal Blank	12/02/10	09:08
1012004-ICB1	Initial Cal Blank	12/02/10	09:08
1012004-CRL1	Instrument RL Check	12/02/10	09:11
1012004-CRL1	Instrument RL Check	12/02/10	09:11
1012004-IFA1	Interference Check A	12/02/10	09:14
1012004-IFA1	Interference Check A	12/02/10	09:14
1012004-IFB1	Interference Check B	12/02/10	09:18
1012004-IFB1	Interference Check B	12/02/10	09:18
1012004-CCV1	Calibration Check	12/02/10	09:22
1012004-CCV1	Calibration Check	12/02/10	09:22
1012004-CCB1	Calibration Blank	12/02/10	09:25
1012004-CCB1	Calibration Blank	12/02/10	09:25
1011118-BLK1	Blank	12/02/10	09:28
1011118-BLK1	Blank	12/02/10	09:28
C101105-01	SLSF02	12/02/10	09:35
1011118-DUP1	Duplicate	12/02/10	09:39
1011118-DUP1	Duplicate	12/02/10	09:39
1012004-SRD1	Serial Dilution	12/02/10	09:43
1012004-SRD1	Serial Dilution	12/02/10	09:43
1011118-MS1	Matrix Spike	12/02/10	09:46
1011118-MS1	Matrix Spike	12/02/10	09:46
1011118-MSD1	Matrix Spike Dup	12/02/10	09:50
1011118-MSD1	Matrix Spike Dup	12/02/10	09:50
1011118-PS1	Post Spike	12/02/10	09:55
1011118-PS1	Post Spike	12/02/10	09:55
C101105-02	SLSF04	12/02/10	09:58
1012004-CCV2	Calibration Check	12/02/10	10:06
1012004-CCV2	Calibration Check	12/02/10	10:06
1012004-CCB2	Calibration Blank	12/02/10	10:09
1012004-CCB2	Calibration Blank	12/02/10	10:09
C101105-03	SLSF05	12/02/10	10:12
C101105-04	SLSE10	12/02/10	10:14
C101105-07	SLSE18-06	12/02/10	10:26
C101105-09	SLSO01-08	12/02/10	10:34
C101105-10	SLSO02-06	12/02/10	10:38
1012004-CCV3	Calibration Check	12/02/10	10:48
1012004-CCV3	Calibration Check	12/02/10	10:48
1012004-CCB3	Calibration Blank	12/02/10	10:51
1012004-CCB3	Calibration Blank	12/02/10	10:51
1011118-SRM1	Reference	12/02/10	10:54

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #: DG-220

TechLaw Inc., ESAT Region 8

INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: EPA 200.2/200.7

Total Recoverable

Sequence ID#: 1012004

Instrument ID #: ICPOE - PE Optima

Water

LSR #: DG-220

Analysis ID	Sample Name	Analysis Date	Analysis Time
1011118-SRM1	Reference	12/02/10	10:54
C101105-05	SLSE15	12/02/10	10:57
C101105-08	SLSEPP-06	12/02/10	11:08
C101105-11	SLSO13-06	12/02/10	11:11
C101105-06	SLSE15D	12/02/10	11:16
1012004-CCV4	Calibration Check	12/02/10	11:19
1012004-CCV4	Calibration Check	12/02/10	11:19
1012004-CCB4	Calibration Blank	12/02/10	11:22
1012004-CCB4	Calibration Blank	12/02/10	11:22

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

Certificate of Analysis

TDF #:

DG-220

TechLaw Inc., ESAT Region 8

INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: EPA 200.2 / 200.8

Total Recoverable

Sequence ID#: 1012005

Instrument ID #: ICPMS-PE DRC-II

Solid (dry wt basis)

LSR #: DG-220

Analysis ID	Sample Name	Analysis Date	Analysis Time
1012005-ICV1	Initial Cal Check	12/02/10	10:38
1012005-ICB1	Initial Cal Blank	12/02/10	10:41
1012005-CRL1	Instrument RL Check	12/02/10	10:44
1012005-IFA1	Interference Check A	12/02/10	10:48
1012005-IFB1	Interference Check B	12/02/10	10:51
1012005-CCV1	Calibration Check	12/02/10	10:54
1012005-CCB1	Calibration Blank	12/02/10	10:57
1011118-BLK2	Blank	12/02/10	11:00
C101105-01	SLSE02	12/02/10	11:02
1011118-DUP2	Duplicate	12/02/10	11:05
1012005-SRD1	Serial Dilution	12/02/10	11:08
1011118-SRM2	Reference	12/02/10	11:11
1011118-MS2	Matrix Spike	12/02/10	11:14
1011118-MSD2	Matrix Spike Dup	12/02/10	11:16
1011118-PS2	Post Spike	12/02/10	11:19
C101105-02	SLSE04	12/02/10	11:22
1012005-CCV2	Calibration Check	12/02/10	11:28
1012005-CCB2	Calibration Blank	12/02/10	11:31
C101105-03	SLSE05	12/02/10	11:34
C101105-04	SLSE10	12/02/10	11:36
C101105-05	SLSE15	12/02/10	11:39
C101105-06	SLSE15D	12/02/10	11:42
C101105-07	SLSE18-06	12/02/10	11:45
C101105-08	SLSEPP-06	12/02/10	11:48
C101105-09	SLSO01-08	12/02/10	11:50
C101105-10	SLSO02-06	12/02/10	11:53
C101105-11	SLSO13-06	12/02/10	11:56
1012005-CCV3	Calibration Check	12/02/10	12:02
1012005-CCB3	Calibration Blank	12/02/10	12:05

Project Name: Rico-Argentine - Soil Sediment - Nov 2010

TDF #: DG-220

Certificate of Analysis